Replaceable, interchangeable edge and grind plate systems for skis and snowboards.

The present invention relates to skis, snowboards, and other devices that use metal, plastic or composite edges to turn or control the device.

Many different designs have been used to make skies and snowboards as usable and durable as possible. To date, these devices all fail to provide longevity and versatility to the edges. The edges of these devices are permanently attached to the ski or snowboards. The edges frequently become dull or damaged while being used. Once an edged is damaged or has lost its sharpness, the complete ski or snowboard can be placed on a grinder and have the edges re-sharpened. This technique can only be used a few times before the ski or snowboard is useless. If the edge is damaged due to impact with rocks or other hard surfaces it will not only be dulled, but may be bent or broken. This type of damage is costly to repair if it can be repaired at all. Often time ski and snowboard edges are damaged from sliding or grinding on metal rails, trees, benches and other obstacles. This occurs on a daily basis, as grinding/sliding has become a very popular trick among younger skiers and snowboarders. Ski resorts are now regularly putting obstacles like these up for skiers and snowboarders to do tricks on. These types of tricks destroy the edges. Dull edges do not cut into hard packed snow very well. This is potentially dangerous and reduces the amount of control and life of the skis or snowboard. Sharp edges do not slide or grind well as they tend to dig into or catch on the object being slid upon. The invention is a replaceable edge system and grind plate system for skis and snowboards that directly addresses both problems.

There has been no prior attempt to make skis or snowboards more usable and durable in regards to a replaceable edge designed for conventional skiing or snowboarding as well as for sliding or grinding. There has been one prior attempt to make a removable edge for a snowboard. U.S. patent No. 5,462,304 to Nyman (1995) mainly claims a specific edge design that aids in making snowboarding easier and more predictable for beginners. This edge is specific to his design and is re-moveable. Unfortunately his edge design is not applicable to intermediate and advanced snowboarders. This is because the goal for these snowboarders is to have a board that is highly maneuverable or agile and does not have a tendency to lock the rider into a stable position for the sake of control. Nyman also greatly increases the edges surface area over that of conventional snowboard edge. This is a disadvantage to a proficient snowboarder because of the increased friction the edges create, resulting in slower acceleration and slower speeds for snowboarders. Nyman's three saw tooth surfaces and dual acting edge is not applicable to grinding/sliding because of its multiple raised edges that would be prone to catching when the board is being slid across obstacles. Finally, Nyman's edge is only removable in one piece. As far as I am aware there has also never been an attempt to create a grind plate system for skis or snowboards which protects the edges from the damages of sliding and grinding and which can be removed for conventional skiing and snowboarding.

The purpose of this invention is to provide skis, snowboards and similar devices with replaceable and interchangeable edge sections and/or a fixed or removable grind plate.

The edge sections are specifically designed to provide the optimal edges for conventional skiing and snowboarding and with a change of an edge section, the best edge for sliding or grinding. These edges can be easily removed and replaced for a given activity or due to edge damage. The removable system can adapt to a manufacturers specific design, allowing for it to be used on any current or future ski or snowboard design. Replaceable edges will also provide manufacturers with new design options for their products. This system can also use metal, plastic or composite materials to provide the best edge or combination of edge sections for a given activity, such as rail sliding or a given snow condition, i.e. ice, powder etc... The grind plates are designed to provide protection to a ski and snowboard edge during sliding or grinding. These plates can be made of metal, plastic or composite materials. They can be either permanently attached to a ski or snowboard or made for easy removal and replacement. They are designed to complement the ski or snowboards performance.

Replaceable edges/sections and grind plates will provide riders with a new level of equipment durability as well as customization, allowing for one pair of skis or a single snowboard to provide greater variety in performance and usability by being ideal for traditional skiing or snowboarding and ideal for sliding and grinding.

Drawings

Fig. 1 is a side view of the ski or snowboard constructed in accordance with the invention.

Fig. 2 is a side view of a ski or snowboard constructed in accordance with the invention, showing the center edge section removed.

Fig. 3 is an exploded side view of the ski or snowboard in fig. 2.

Fig. 4 is a bottom view of the ski or snowboard in fig. 1.

Fig. 5 is a bottom view of the ski or snowboard in fig. 2, showing the center edge sections removed.

Fig. 6 is a front to back view of a ski or snowboard showing the grind plates attached to the sides.

Fig. 7 is a front to back view of the ski or snowboard in fig. 6, with the grind plates removed.

Fig.8 is a front to back view of a ski or snowboard grinding or sliding side ways on an object.

Fig. 9 is a front to back view of a ski or snowboard with grind plates attached, grinding or sliding side ways on an object.

Fig. 10 is a side view of a ski or snowboard grinding or sliding side ways on an object.

Reference Numerals in Drawings

1 top
2 tip
3 bottom
4 edge
4.1 removed edge
5 tail
6 removable edge section
7 grind plates
8 represents an object a skier or snowboarder could grind or slide on, such as: trees, rails, benches etc...
9 arrow indicates movement of ski or snowboard from left to right
10 indicates movement of ski or snowboard into page (away from viewer)

Detailed Description of Drawings

The ski or snowboard of the present invention is shown from a side view in its usable configuration Fig.1 and consists of a tip 2, a top 1, a tail 5, a bottom 3, and an edge 4.

Fig. 2 is a side view of the ski or snowboard in Fig. 1. This figure shows a section of edge 4, marked 4.1 removed from its edge section 6, on the ski or snowboard. The tip 2, bottom 3, top 1, and tail 5 are depicted for clarity. The edge sections 4.1 can be made of plastic, metal or composite materials and can be combined in any combination to the ski or snowboards removable edge section 6.

Fig. 3 is an exploded view of Fig. 2. This figure clearly shows a section of edge 4, marked 4.1 removed from its edge section 6. The tip 2, top1, and tail 5 are indicated for clarity. The removed edge sections 4.1 can be made of plastic, metal or composite materials and can be combined in any combination to the ski or snowboards removable edge section 6.

Fig. 4 is a bottom view of the ski or snowboard in its usable configuration, as show in Fig. 1. This figure shows the tip 2, bottom 3, side edges 4, in place in the center edge sections 6, and tail 5 to orient the viewer.

Fig. 5 is a bottom view of Fig. 2. This figure shows sections of the side edges 4, marked 4.1 removed from their edge sections 6. The tip 2, bottom 3 and tail 5 are labeled for clarity. The edge sections 4.1 can be made of plastic, metal or composite materials and can be combined in any combination to the ski or snowboards removable edge sections 6.